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Section 2 – Explosive Device Mitigation and Remediation Equipment

Overview

This section was originally created in the Fall 2004 version of the SEL, and serves both to consolidate all bomb squad-specific equipment in one area (exclusive of personal protective equipment, which remains in Section 1), and to more closely align the SEL with the grant guidance promulgated by DHS. The use of a separate major section of the SEL (and the DHS Authorized Equipment List) for this equipment underscores the criticality of bomb squad operations and the seriousness of the threat from Improvised Explosive Devices (IEDs) as both primary and secondary devices.

The IAB continues to support much-needed expansion of the bomb squad equipment list and the role of bomb squads in emergency operations. The IAB continues its close collaboration with the National Bomb Squad Commanders Advisory Board (NBSCAB) in identifying essential equipment and advising that the purchase of such equipment be limited to Accredited Bomb Squads. For many of the items in this section (and some of the corresponding EOD Personal Protective Equipment in Section 1) readers will find the notation “For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4” in the Operating Considerations. The inclusion of this notation was an important milestone in setting guidelines for the purchase of specific bomb squad equipment.

Changes for 2006

This edition contains a number of minor edits and upgrades to existing items. In addition, the SubGroup has implemented a new approach to robotic and remotely operated devices. The baseline platforms for items such as robots and unmanned vehicles now appear in Section 3, while other sections contain items that address mission-specific attachments or modifications. This section, for example, now includes an item for robot attachments/upgrades associated with explosive device detection and mitigation.

Online Selection Factors

Like most sections in the 2006 SEL, the online¹ version of the Explosive Device Mitigation and Remediation Equipment Section uses a pair of selection factors to assist users in quickly identifying appropriate equipment items. For this section, the SubGroup chose to use Proficiency Level and Hazard Environment (described below) as the two factors. Every online item is “tagged” for each appropriate combination of factors. Thus users on the online version can choose any combination of Proficiency Level and Hazard Environment, and the system will provide a list of all items tagged for that combination.

The first selection factor is Proficiency Level. In addition to any specific training required to operate an individual piece of equipment, the equipment operator must possess the skills necessary to meet the recommended proficiency level. The factors considered in determining this level include the anticipated location of operation of the equipment (i.e. hot zone, warm zone, or cold zone), the complexity of the equipment, and the necessity of chemical or biological training or expertise. The definitions used for proficiency levels have been adapted using NFPA 472, Standard for Professional Competence of Responders to Hazardous Materials Incidents, as a starting point. They are:

¹ The on-line version is available on the Responder Knowledge Base, www.rkb.mipt.org.

- **Awareness Level.** Responders at the awareness level are those persons who, in the course of their normal duties, can be the first on the scene of an incident. First responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel, and secure the area.
- **Operational Level.** Responders at the operational level are those persons who respond to WMD incidents as part of the initial response to the incident for the purpose of protecting nearby persons, the environment, or property.
- **Technician Level.** Technicians are those persons possessing special training who respond to incidents for the purpose of control, active response, or remediation. Technicians are expected to use specialized equipment such as chemical protective clothing and control equipment.
- **Specialist Level.** Specialists are those persons possessing advanced special training who respond to incidents for the purpose of providing specialized assistance in control, active response, or remediation. Specialists are expected to use complex equipment to perform tasks restricted to those with specific advanced training.
- **Command Level.** Command level personnel include the incident commander and other staff members. The incident commander is that person who is responsible for all decisions relating to the management of the incident and site operations.

The second selection factor is the Hazard Environment(s) for which each item is suitable. The values for this factor address the commonly used CBRNE nomenclature. However, for our purposes it is useful to represent the Nuclear “N” as part Thermal, part Explosive, and part Radiological. Therefore, the values used are:

- Chemical
- Biological
- Radiological
- Thermal
- Explosive

Section 2 | Explosive Device Mitigation and Remediation Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards ¹
EX - Equipment 00 - General			
02EX-00-EXEN Equipment, Explosive Entry	Explosive entry equipment, upgrades. Used for explosive tactical entries	----- For use by properly trained individuals only.	
02EX-00-EXMP Magazines, Portable or Transportable, Explosive	Portable or transportable magazines for short or long-term storage and transport of explosive materials or possible IEDs to and from incident scene. Includes any movable magazines, including those requiring crane lift/placement.	----- For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	
02EX-00-KTFO Kit, Fiber Optic	Fiber optic kit (inspection or viewing)	----- Potential application both in law enforcement surveillance mode and technical rescue search mode.	
02EX-00-MITA Mitigation Area, Explosive	Explosive/bomb mitigation areas, explosive training, upgrades.	----- Area in which the bomb technician can safely mitigate/train for Improvised Explosive Devices (IED). For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	
02EX-00-PBIE	Equipment for post-blast investigation, explosives/	Includes equipment for marking, sampling, collecting, photographing, and processing. →	

¹ Use numbers given to refer to Standards List at the end of this document.

Section 2 | Explosive Device Mitigation and Remediation Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards ¹
EX - Equipment 00 - General - <i>Continued</i>			
Equipment, Post Blast Investigation	Improvised Explosive Device (IED) investigation tools, metal detectors, evidence processing equipment, upgrades.		
02EX-00-TCVV Vessel, Containment	Containment vessels (including vented, total containment (TCV), and transport), for containment, transportation, or temporary storage of explosive materials.	----- For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	
02EX-00-TCVW Upgrades, Containment Vessel	Upgrades for containment vessels. Includes items such as ramps for robot accessibility or inspection cameras.	----- For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	
EX - Equipment 01 - X-Ray Equipment			
02EX-01-XRAP X-Ray Unit, Portable or Transportable	Portable or Transportable X-Ray Unit, related attachments and equipment, film, image screens, computers for image storing/transmission, upgrades.	----- Ability to remotely x-ray a suspect package and save/transmit images. For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	

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Section 2 | Explosive Device Mitigation and Remediation Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards ¹
EX - Equipment 02 - Tools			
02EX-02-RBTL Attachments/Tools, Robot	Attachments and tools for use in the explosive mitigation and remediation mission.	<p>For use with robot platform. See 03OE-07-ROBT.</p> <p>For accreditation purposes, a robot is defined by the National Bomb Squad Commanders Advisory Board as including the following features:</p> <ol style="list-style-type: none"> 1) A remote platform guided by remote control capabilities or a tethered line; 2) Ability to support a camera and project a working image back to the operator's location and allow the operator to manipulate the robot; 3) Ability to pick up and manipulate items using a claw-gripper; and 4) Ability to remotely fire a disrupter. <p>-----</p> <p>Ensure compatibility with selected robotic platform, including additional power requirements.</p> <p>Test capability for remote imaging and operation in conditions and environments similar to those anticipated for operation, with particular attention to maintaining signal in environments with RF obstructions.</p> <p>For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.</p>	
02EX-02-TLEX Tools, Explosive Mitigation, Suppression, Deflection	Explosive tools for Improvised Explosive Device (IED) remediation, such as boot bangers, shape charges, explosive/CBRN mitigation tents, bomb blankets, blast suppression.	<p>-----</p> <p>For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.</p>	

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Section 2 | Explosive Device Mitigation and Remediation Equipment

Item Number/Title	Description	Features/Operating Considerations	Standards ¹
EX - Equipment 02 - Tools - <i>Continued</i>			
02EX-02-TLPB Tools, Bomb Disabling	Disabling tools, disrupters, attachments, and upgrades for disabling Improvised (and Vehicle-Borne Improvised) Explosive Devices.	----- For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	
02EX-02-TLRO Tools, Remote Opening, Examination, Handling	Remote opening tools such as rigging kits, pulleys, clamps, poles, probes, mirrors, hand, electric, pneumatic, remote opening, stethoscope, IED handling tools, other non-sparking tools, etc.	----- For use by accredited public safety bomb squads that meet the accreditation standards as defined by the National Bomb Squad Commanders Advisory Board and outlined in the FBI Bomb Data Center Special Technicians Bulletin 87-4.	

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